Sec 5.3

Graphs of Rational Functions in the Form...

$$f(x) = \frac{ax + b}{cx + d}$$

-these graphs will have both a vertical and horizontal asymptote.

-in order to graph, we need to find the 2 asymptotes and determine end behaviours. Also look for other key points (intercepts, "easy to find" points)

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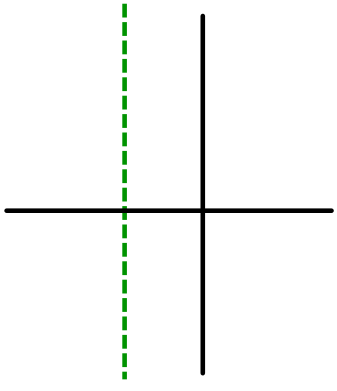
Ex:
Graph $y = \frac{3x - 5}{x + 2}$

Step 1: Determine the vertical asymptote(s)

Step 2: Determine the end behaviour as the function approaches the asymptotes

X	Y
-1.9	
-1.99	
-2	---
-2.01	
-2.1	



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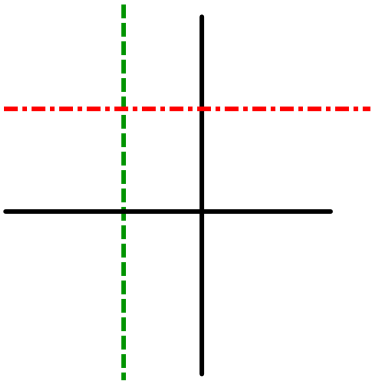
Step 3: Determine the horizontal asymptote.

$$y = \frac{3x - 5}{x + 2}$$

Step 4: Determine the asymptote (end) behaviour as the function approaches the asymptotes.



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Step 5: Find key points

$$y = \frac{3x - 5}{x + 2}$$

y-int

x-int

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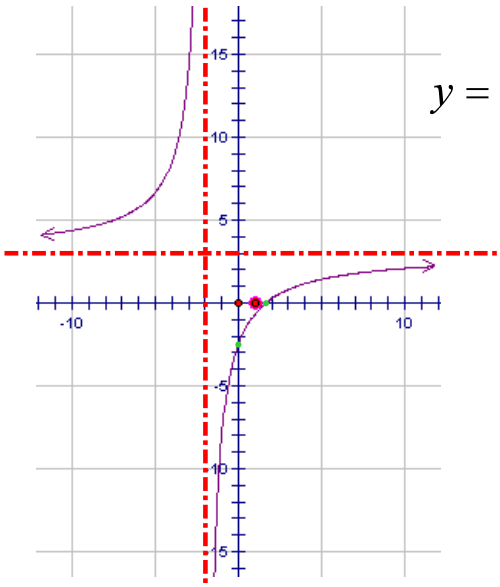

$$y = \frac{3x - 5}{x + 2}$$

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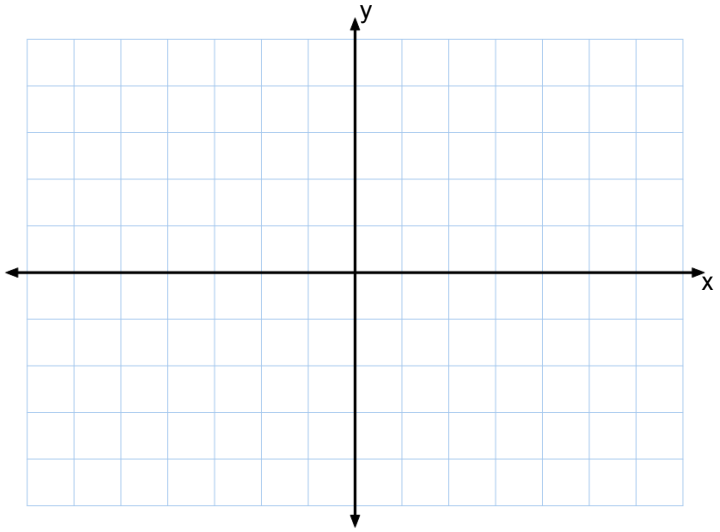
Remember, you still have to watch for factorable denominators and numerators.

Ex: $y = \dfrac{2x + 6}{x + 3}$



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Functions where a=0

$$f(x) = \frac{ax+b}{cx+d} = \frac{b}{cx+d}$$

Vertical asymptote:

Horizontal asymptote:

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Homework

Read the "IN SUMMARY" box carefully on p271

P273 #1, 2, 4ac, 5ac

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